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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/387,569	09/01/1999	GEORGE POLITIS	169.1423	2749

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EXAMINER

GOOD JOHNSON, MOTILEWA

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 09/25/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/387,569

Applicant(s)

POLITIS, GEORGE

Examiner

Motilewa A. Good-Johnson

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-75 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-75 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the following communications: application, filed on 09/01/1999; Amendment A, filed on 06/19/2002; Amendment B, filed on 02/05/2003; Amendment C, filed 07/14/2003.

This action is made final.

2. Claims 1-75 are pending in the application. Claims 1, 14, 25, 38, 49 and 62 are independent claims. Claims 1-6, 8, 10-19, 21-32, 34-43, 45-56, 58-67 and 69-75 have been amended.

3. The present title of the invention is "Region Based Image Compositing" (as originally filed by applicant).

Continued Prosecution Application

4. The request filed on 02/05/2003 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/387,569 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al., U.S. Patent Number 5,933,535, "Object-Based Video Compression Process Employing Arbitrarily-Shaped Features", class 382/243, 08/03/1999, filed 06/04/1996, in view of Snyder et al., U.S. Patent 6,215,503, "Image Generator and Method for Resolving Non-Binary Cyclic Occlusions with Image Compositing Operations", class 345/629, 04/10/2001, filed 05/29/1998.

As per independent claim 1, "a method of generating an image, the image to be formed by rendering and compositing at least a plurality of graphical objects, each object having a predetermined outline, said method comprising: (Lee discloses video encoding of objects and each object having an outline, col. 11, lines 28-53) a dividing step, of dividing a space in which the outlines are defined by at least one region outline substantially following at least one of the predetermine outlines or parts thereof, wherein at least one horizontal or vertical segment . . . is selected from corresponding horizontal or vertical segments of a virtual grid . . . (Lee discloses the object is segmented into regions, and each region having horizontal and vertical segments, col. 23, lines 21-40) a manipulation step, of manipulating the regions to determine a plurality of further regions . . . wherein each further region has a corresponding compositing expression; (Lee discloses) a classification step, of, classifying the further regions according to at least one attribute or any one or more of the graphical objects . . . (Lee discloses the pixels are classified according to predefined attributes, col. 12, lines 5-7) a modification step, of modifying each said corresponding compositing expression according to a classification of each further region to form an optimized compositing expression for

each further region . . . (Lee discloses a modified correlation process which utilizes redundancy inherent in correlating pixel blocks, col. 15, lines 29-35) and a generation step, of generating the image by compositing the plurality of graphical objects . . . (Lee discloses sprite generation for image compositing, cols. 31 - 32)

Lee discloses a chain encoding for the objects represented by their contours and bounded and the chain code describes the pixel positioning for compositing, col. 29, line 45 – col. 3, lines 67, however, it is noted that Lee fails to disclose a compositing expression for each region. Snyder discloses resolving occlusion cycles of object using compositing operations and chain operations for the objects. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the chain code of Lee the chain operation using the compositing operations as disclosed in Snyder to further reduce image composite time and resolve occluded objection in the scene.

With respect to dependent claim 2, attribute is selected from the group consisting of color, opacity and object outline. (Lee discloses the attributes include pixel color and position and could be used with other attributes, col. 12, lines 7-12)

With respect to dependent claim 3, manipulating said regions comprises applying set operations to the regions. Snyder discloses modifications, manipulations, to the image compositing operation to generate a correct output image, col. 28, lines 15-28.

With respect to dependent claim 4, the set operations include difference and/or intersection operations. Snyder discloses atop, over, in and out operations, in col. 27, lines 1-67.

With respect to dependent claim 5, the grid is regularly spaced and preferably orthogonally based. (Lee discloses the grid is composed of triangles, col. 33, lines 5-10)

With respect to dependent claim 6, the grid is irregularly shaped. (Lee discloses grid is composed of triangles, col. 33, lines 5-10, it is inherent that triangles may be irregularly shaped)

With respect to dependent claim 7, compositing expression is a hierarchically structure representation of the image. (Lee discloses in figure 25C)

With respect to dependent claim 8, the image is at least in part a pixel -based image. (Lee discloses in col. 29, lines 55-64)

With respect to dependent claim 9, a flag is stored to indicate whether data of an object is opaque or ordinary. Snyder discloses an occluder list in which the implementation flags deactivates objects of the tree to be returned as occluders, col. 18, lines 49-65.

With respect to dependent claim 10, the compositing expression is optimized based on a value of the flag for contributing objects. Snyder discloses deactivation an object and setting the flag to indicate an activated object, col. 19, lines 3-10.

With respect to dependent claim 11, wholly opaque object in the region acts to eliminate one or more objects within the further region from said compositing expressions. Snyder discloses an occlusion testing of object groups to determine which objects occlude or can be seen, col. 19, lines 11-42.

With respect to dependent claim 12, wholly transparent object in the region eliminates at least itself from the compositing expression. Snyder discloses eliminated hidden surfaces and resolving occlusions, col. 4, lines 1-7.

With respect to dependent claim 13, modifying comprises modifying a manner in which the compositing expression is evaluated without modifying the hierarchically structured representation. Snyder discloses modifications, manipulations, to the image compositing operation to generate a correct output image, col. 28, lines 15-28.

As per independent claims 14, 25, 38, 49 and 62, they are rejected based upon similar rational as above independent claim 1.

With respect to dependent claims 15-24, 39-48 and 63-72, they are rejected based upon similar rational as above dependent claims 2 and 5-13 respectively.

With respect to dependent claims 26-37, 50-61, they are rejected based upon similar rational as above dependent claims 2-13 respectively.

With respect to dependent claim 73-75, on or more objects within the further regions are eliminated from one or more of the corresponding compositing expressions depending on the classifications. Snyder further discloses eliminating coherence in all descendants in a subdivided dimension of a tree, col. 18, lines 23-34.

Response to Arguments

7. Applicant's arguments with respect to claims 1-75 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Motilewa A. Good-Johnson whose telephone number is (703) 305-3939. The examiner can normally be reached on Monday-Friday 8:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703) 308-6606 for regular communications and (703) 308-6606 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Motilewa A. Good-Johnson
Examiner
Art Unit 2672

mgj
September 15, 2003

A handwritten signature in black ink, appearing to read 'M. Razavi', with a large, stylized loop at the end.

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600